IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

SLOAN VALVE COMPANY,	)	
	)	
	)	
Plaintiff,	)	
	)	Case No. 10-cv-00204
v.	)	
	)	
	)	
ZURN INDUSTRIES, INC., and ZURN INDUSTRIES, LLC,	)	
	)	
	)	
	)	
Defendants.	)	

MEMORANDUM OPINION AND ORDER

AMY J. ST. EVE, District Court Judge:

Plaintiff Sloan Valve Company ("Sloan") filed the present civil action against Defendant Zurn Industries, Inc. and Zurn Industries, LLC (collectively "Zurn") alleging various patent infringement claims on its U.S. Patent No. 7,607,635 ("the *Wilson* patent"), including willful infringement. Sloan has disclosed Michael C. Thuma as one of its technical experts for trial. Zurn has moved to exclude the expert testimony of Thuma pursuant to Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993). For the reasons discussed below, the Court grants the motion in part and denies it in part.

BACKGROUND

Sloan alleges that Zurn willfully infringed the *Wilson* patent. Specifically, Sloan has alleged that Zurn appropriated its "dual mode flush valve invention," therefore infringing the *Wilson* patent, entitled "Flush Valve Handle Assembly Providing Dual Mode Operation" and the

corresponding U.S. Patent Application Publication No. 2006/0151729 (the "'729 Patent Application"). The *Wilson* Patent "relates to flush valves for use with plumbing fixtures such as toilets, and more specifically to improvements in the bushing of the actuating handle assembly that will provide for user-selectable, dual mode operation of the flush valve." (R. 314-1, *Wilson* Patent, col1, 6-10.) The improvement is a mechanism that allows a user to select one of two flush volumes based on the direction of actuation of the handle: a full flush volume to evacuate solid waste from the bowl or a reduced flush volume to remove liquid waste. (*Id*., col. 1, 11-19, col. 2, 27-33.)

Sloan disclosed Michael C. Thuma as one of its technical experts. Sloan asked Thuma "to consider how long it would have taken to design and make the fixture that Zurn uses in a milling operation to machine an angled axis through the central passage of the retainer used in Zurn's dual flush handle." Based on this information, Sloan asked Thuma to opine on "the complexity of fabricating Zurn's fixture with respect to level of skill and amount of time."

LEGAL STANDARD

"The admissibility of expert testimony is governed by Federal Rule of Evidence 702 and the Supreme Court's opinion in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993)." *Lewis v. Citgo Petroleum Corp.*, 561 F.3d 698, 705 (7th Cir. 2009). Rule 702 provides, in relevant part, that "[i]f scientific, technical or other specialized knowledge will assist the trier of fact[,] . . . a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion. . . ." *Id.* *See also Happel v. Walmart Stores, Inc.*, 602 F.3d 820, 824 (7th Cir. 2010).

Under the expert-testimony framework, courts perform the gatekeeping function of determining whether the expert testimony is both relevant and reliable prior to its admission at

trial. *See id.*; *Power Integrations, Inc. v. Fairchild Semiconductor Intern., Inc.*, 711 F.3d 1348, 1373 (Fed. Cir. 2013); *United States v. Pansier*, 576 F.3d 726, 737 (7th Cir. 2009) ("To determine reliability, the court should consider the proposed expert's full range of experience and training, as well as the methodology used to arrive [at] a particular conclusion."). In doing so, courts "make the following inquiries before admitting expert testimony: first, the expert must be qualified as an expert by knowledge, skill, experience, training, or education; second, the proposed expert must assist the trier of fact in determining a relevant fact at issue in the case; third, the expert's testimony must be based on sufficient facts or data and reliable principles and methods; and fourth, the expert must have reliably applied the principles and methods to the facts of the case." *Lees v. Carthage College*, 714 F.3d 516, 521-22 (7th Cir. 2013); *see also Stollings v. Ryobi Tech., Inc.*, 725 F.3d 753, 765 (7th Cir. 2013); *Power Integrations*, 711 F.3d at 1373; *Pansier*, 576 F.3d at 737.

In assessing the admissibility of an expert's testimony, the Court's focus "must be solely on principles and methodology, not on the conclusions they generate.'" *Winters*, 498 F.3d at 742 (quoting *Chapman v. Maytag Corp.*, 297 F.3d 682, 687 (7th Cir. 2002)). *See also Stollings*, 725 F.3d at 765. "The goal of *Daubert* is to assure that experts employ the same 'intellectual rigor' in their courtroom testimony as would be employed by an expert in the relevant field." *Jenkins v. Bartlett*, 487 F.3d 482, 489 (7th Cir. 2007) (quoting *Kumho Tire*, 526 U.S. at 152). "A *Daubert* inquiry is not designed to have the district judge take the place of the jury to decide ultimate issues of credibility and accuracy." *Lapsley v. Xtek*, Inc., 689 F.3d 802, 805 (7th Cir. 2012).

ANALYSIS

Zurn seeks to exclude the expert testimony of Mr. Michael Thuma pursuant to Rule 702 and *Daubert*. *See* Fed.R.Evid. 702; *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L.Ed.2d 469 (1993). Zurn contends that Mr. Thuma's opinions are pure speculation and that they amount to improper credibility testimony.

I. Mr. Thuma

Mr. Thuma has served as the Director of Product Development and Innovation for Suncast Corporation, a consumer goods company and manufacturer of outdoor products. (R. 560-1, Thuma Report ¶ 3.) Mr. Thuma has a Bachelor of Fine Arts in Industrial Design from the University of Illinois and a Master of Science in New Product Development from Northwestern University. (*Id.*) His Master of Science program consisted of a combination of classes "geared towards the process of developing new products." (R. 659, Transcript of Thuma *Daubert* Hearing ("Tr.") at 24.) Mr. Thuma has "extensive experience in the design, prototyping, manufacturing, and reverse-engineering of machined metal components." (Thuma Report, ¶ 4.) Zurn has not challenged his credentials.

II. Mr. Thuma's Opinions

Mr. Thuma's report explains that Sloan has asked him "to consider how long it would have taken to design and make the fixture that Zurn uses in a milling operation to machine an angled axis through the central passage of the retainer used in Zurn's dual flush handle." (*Id.*, ¶ 7.) In reaching his opinions, Mr. Thuma looked at the Sloan and Zurn flush handles and analyzed the Operating Method Sheet for Zurn's dual flush retainer machine process which included photographs of the fixture that Zurn used in making its dual flush retainer. The Operating Method Sheet included "step by step instructions about how to assert a standard

bushing into the fixture and use a mill to remove portions of the plastic from the central passageway to create the dual flush retainer." (Tr. at 35.) Mr. Thuma did not physically inspect Zurn's fixture. He also did not review deposition testimony from the case. (Report, at ¶ 10.)

In his report, Mr. Thuma offers four opinions:

1. With the benefit of having specimens of Sloan's dual flush handle, Zurn would have been able to inspect and measure Sloan's dual flush bushing to ascertain that the bushing has a second, angled axis of plunger travel that allows the handle to provide a reduced flush. (Opinion #1)

2. Zurn's fixture that it uses to machine the angled axis into its retainer is a simplistic design that appears to require only a handful of machining operations to create from stock aluminum plating. I would expect anyone having ordinary skill in the machining trade to be able to design and fabricate a fixture similar to Zurn's within a day or less. (Opinion #2)

3. Specifically, based on my experience with machining metal parts, including my experience as a prototype shop manager, I would expect anyone having ordinary skill in the machining trade to be able to design a fixture similar to Zurn's within 1-2 hours, and to fabricate such a fixture within 2-3 hours. (Opinion #3)

4. Thus, if the new dual flush valve handle design that Zurn had created in June 2005 truly was the same as the dual flush handle that Zurn began producing in December 2005, the absence of the fixture that Zurn uses to create its dual flush retainer, which could have been designed and fabricated in a matter of hours, would not explain why Zurn's June 2005 design did not go into production until several months later – after Zurn obtained samples of Sloan's dual flush handle in November, 2005. (Opinion #4)

(Report, ¶¶ 19-22.)

During his deposition, Mr. Thuma stated that he believes the "the Sloan Uppercut was reverse engineered to create the Zurn product, the Zurn bushing." He repeatedly offered opinions during this deposition testimony that Zurn had copied or reverse engineered the Sloan product. Sloan subsequently represented that "Mr. Thuma will **not** express opinions about reverse engineering of Sloan's commercial product or the length of time that Zurn took to develop the accused products. Rather, Mr. Thuma provides opinions that the simplistic fixture

that Zurn uses to mill out the central passage of a standard handle retainer to create a dual flush retainer could have been designed and fabricated within a day." (R. 597, at 3) (emphasis in original).

Sloan modified Opinion # 1 in a filing four days before the *Daubert* hearing and in response to an inquiry from the Court. (R. 648, Supplement.) Specifically, Sloan proposed a modified opinion as follows:

> With the benefit of having specimens of Sloan's dual flush handle, Zurn would have been able to inspect and measure Sloan's dual flush bushing to ascertain that the bushing has a second, angled passage.

(*Id.* at 2.) In addition, during the course of the hearing, Sloan modified Opinion #4 as follows:

> Thus, if the new dual flush valve handle design that Zurn had created in June 2005 truly was the same as the dual flush handle that Zurn began producing in December 2005, the absence of the fixture that Zurn uses to create its dual flush retainer, which could have been designed and fabricated in a matter of hours, would not explain why Zurn's June 2005 design did not go into production until several months later.

(Tr. at 98-100.)

III. Mr. Thuma May Not Opine on Reverse Engineering or Copying

Zurn challenged the admissibility of Mr. Thuma's opinions regarding reverse engineering and copying of the Sloan product on the grounds that such opinions amount to mere speculation. Sloan essentially concedes this point by withdrawing any reverse engineering or copying opinions from Mr. Thuma. Although Sloan has represented that Mr. Thuma will not opine on reverse engineering or copying, Opinion 1 and Opinion 4 both opine on this issue. Even Mr. Thuma admitted that both of these Opinions pertain to reverse engineering or copying. (Tr. at 63-64 (Opinion #4), 77 (Opinion # 1.) These opinions are speculative on Mr. Thuma's part because they are not based on sufficient data or scientific principles. As such, they are inadmissible.

In addition, Opinion # 1 lacks any grounding in reliable scientific principles. Sloan even concedes that "Mr. Thuma has not performed any technical analysis of Sloan's dual flush handle …." (R. 648 at 2.) Regarding Opinion #1, Mr. Thuma opines that Zurn would have been able to "inspect and measure Sloan's dual flush bushing to ascertain that the bushing has a second, angled passage." Yet, Mr. Thuma conceded at the *Daubert* hearing that he could not determine that Sloan's dual flush bushing had a second, angled passage by merely inspecting Sloan's dual flush handle. (Tr. at 77-83.) Although he could "see an opening at the top of this bushing," he "could not see what that opening was." (*Id.* at 83.) Mr. Thuma also did not measure Sloan's dual flush bushing, thus he cannot opine that Zurn could have done so and made a determination regarding a second, angled passage. In essence, he has not based Opinion #1 on any scientific methodology or principles. Instead, he speculates about what could have happened without any scientific grounding. His personal experience in design is not sufficient for Opinion #1 given that he admitted he did not see the second angle through mere inspection and did not measure the dual flush bushing. Accordingly, he cannot give Opinion #1

IV. Opinions Regarding the Timing for the Design and Manufacture of the Fixture

Although Zurn initially challenged Mr. Thuma's opinions -- Opinion ## 2 and 3 -- regarding the time it would take to design and fabricate a fixture similar to the fixture that Zurn uses to machine the angled axis into its retainer, at the *Daubert* hearing Zurn conceded that it is not challenging "the substance" of these opinions. (Tr. at 92.) Indeed, Mr. Thuma is qualified to give these opinions based on his experience in the industry, his experience in having made fixtures, and his knowledge in working with people who make fixtures.

V. Relevance of Timeframe to Sloan's Intentional Copying Claim

Zurn nonetheless challenges the relevance of these opinions and further argues that expert testimony is not necessary on the issue. The Court disagrees.

Mr. Thuma's opinions regarding the time it would take to design and fabricate a fixture similar to Zurn's are relevant to Sloan's argument regarding copying. It is clear that evidence of intentional copying is relevant to a willfulness determination. *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1285 (Fed. Cir. 2000); s*ee also In re Hayes Microcomputer Prods., Inc. Patent Litig.*, 982 F.2d 1527, 1543 (Fed.Cir.1992) ("Whether the infringer intentionally copied the ideas of another" is a relevant factor to a willfulness determination). Intentional copying is also a relevant factor in determining whether a case is "exceptional" when a court determines whether to award fees. *Spectralytics, Inc. v. Cordis Corp.*, 649 F.3d 1336, 1347-48 (Fed. Cir. 2011); *i4i Ltd. P'Ship v. Microsoft Corp.*, 598 F.3d 831, 859 (Fed. Cir. 2010).

Here, Sloan asserts that Zurn became aware of Sloan's dual flush valve when it discovered Sloan's literature describing the product in May of 2005. Sloan contends that the facts will establish that Zurn claims it developed its dual flush design in June 2005 – before it saw Sloan's Uppercut dual flush valve. On August 4, 2005, Zurn announced that it had a commercially-available dual flush valve product. Zurn, however, did not offer its dual flush valve to its customers until six months later because it did not have such a product to offer for sale. According to Sloan, Zurn ordered samples of Sloan's dual mode flush valve on August 11, 2005, and obtained Sloan's dual flush handles on November 11, 2005 – approximately a month before Zurn offered its product to its customers. Sloan contends that Zurn completed its engineering drawings on December 12, 2005 and released its dual flush valve product at the end of December 2005.

In addition, Sloan argues that the evidence at trial will establish that in June 2005, Zurn stated that the only issue that prevented it from completing its design was "tooling." On November 14, 2005, according to Sloan, Zurn told its counsel that it was still waiting for tooling. Sloan intends to argue, based on this evidence, that Zurn's "tooling story" will not withstand scrutiny because the only tooling it had to develop was the fixture which Zurn uses to mill out the second, angled bore in its retainer. According to Mr. Thuma, Zurn could have designed and fabricated such a fixture in less than a day. Such testimony is appropriate expert testimony because the time required to complete this task is not necessarily within the realm of understanding of a lay person. Based on this evidence that Sloan contends it will establish at trial, Mr. Thuma's opinions regarding the timing it would take to design and fabricate the fixture are relevant to the issue of copying. As such, the Court denies this aspect of the *Daubert* motion. If Sloan fails to introduce this factual evidence at trial, Zurn may renew this aspect of the motion.

CONCLUSION

For the reasons discussed above, the Court grants in part, and denies in part, and denies in part as moot Zurn's motion to exclude testimony of Mr. Thuma.

Dated: October 3, 2013

ENTERED:

AMY J. ST. EVE
United States District Court Judge